

**Work Order ID 121871**

Wednesday, July 02, 2014 3:37:44 PM

**\*121871\***

Page 1

Item ID: 646.3312 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Center Plate  
Start Date: 7/31/14 Start Qty: 10.00 **\*10\*** Cust Item ID:  
Required Date: 7/31/14 Req'd Qty: 10.00 **\*10\*** Customer:  
Reference:

Approvals: Process Plan: MLJ Date: 14-07-04 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
646.3300	N/C

100

0.00

**\*100\***

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 16.300"

\*\*\* ONE BLANK MAKES TWO PARTS\*\*\*

mlj 14/07/25 10 0

110

0.00

**\*110\***

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1-Machine per folio FB153  
DWG REV: N/C  
FOLIO REV: AA

2- deburr and break all sharp edges

D. 14/07/27 10 0**DAS  
08  
9-89**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other
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**Work Order ID 121871****\*121871\***

Page 2

Item ID: 646.3312

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Center Plate

Start Date: 7/31/14 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 7/31/14 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***  
Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS 08 9-89
<b>*120*</b>									
QC	Memo	0.00		B. P 14/07/27		10	0		
Quality Control									
130	QC8- Inspect parts - second check	0.00							
<b>*130*</b>									
QC	Memo	0.00				10	0		14-07-28
Quality Control									
131		0.00							
<b>*131*</b>									
HandFinish	Memo	0.00							
Hand Finishing	CLEAN AND REMOVE ALL PART MARKING								

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



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Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other
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# Work Order ID 121871

Wednesday, July 02, 2014 3:37:44 PM

**\*121871\***

Page 3

Item ID: 646.3312 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Center Plate  
Start Date: 7/31/14 Start Qty: 10.00 **\*10\*** Cust Item ID:  
Required Date: 7/31/14 Req'd Qty: 10.00 **\*10\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
<b>*140*</b>									
Outsource4	Memo	0.00							
Outsource process - Anodize	Issue P/O to ATG : <u>25229</u>								<u>CL 14/07/30 10</u>
	1- Black Anodize as per Dwg 646.3300								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Comformity is required								
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
<b>*150*</b>									
Packaging	Memo	0.00							<u>10K SP 14-8-18.</u>
Packaging									
155	<u>QCP</u> QC5- Inspect part completeness to step on W/O	0.00							
<b>*155*</b>									
QC	Memo	0.00							<u>10</u>
Quality Control									<u>5</u> <u>M104/20</u> <u>DAS 38 9-89</u> <u>14/08/19</u>

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



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Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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Design									
Doc/Data									
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Handling/Pre									
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Offset/Setup									
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Supplier									
Training									
Transport									
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### FAULT CATEGORY

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**Work Order ID 121871**

Wednesday, July 02, 2014 3:37:44 PM

**\*121871\***

Page 4

Item ID: 646.3312 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Center Plate  
Start Date: 7/31/14 Start Qty: 10.00 **\*10\*** Cust Item ID:  
Required Date: 7/31/14 Req'd Qty: 10.00 **\*10\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Identify as per dwg & Stock Location: <i>MF</i>	0.00							
<b>*180*</b>									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
						<i>10X</i>		DAS 28 9-89	AUG 20 2014
190	QC21- Final Inspection - Work Order Release	0.00							
<b>*190*</b>									
QC	Memo	0.00							
Quality Control									

*ML5 14-08-21*

*4.8.20*

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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# Picklist Print

Wednesday, July 02, 2014 3:37:44 PM

Page 1  
✓

Work Order ID: 121871

**\*121871\***

Parent Item: 646.3312

**\*646.3312\***

Parent Item Name: Center Plate

Start Date: 7/31/14

Required Date: 7/31/14

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 12/11/16 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X0.375		Purchased		No		100	f	44.2700	0.68	7.157895			

**\*M7075T6B5 000X0 375\***

**\*\***

7075-T6 BAR 5.000" X 0.375"

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT049	44.27	
m126615	8	
m127614	1.5	
→ m128502	34.77	

7.2 9.4 14/07/25

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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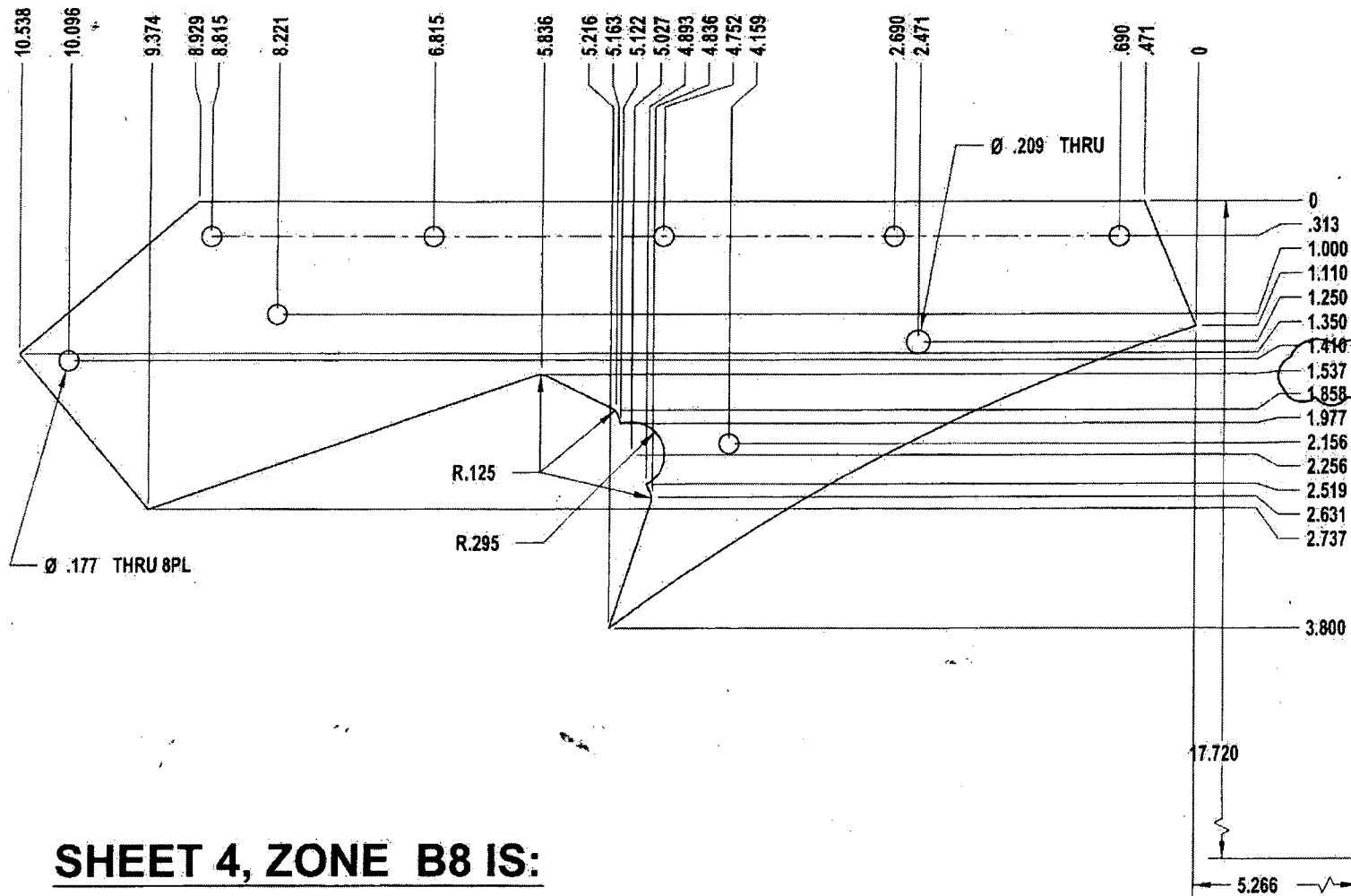
Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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<b>APICAL</b> INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03724				SHEET 1 OF 1	
	DWG NO. 646.3300	REV: N/C	PREPARED BY B. PETERS	DATE: 12/05/12	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
	DWG TITLE: UPPER CUTTER ASSY					
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER		
TRANSACTION CODES (TC) A-ADD C-CREATE R-REVISE D-DELETE	REASON: REVISED ORDINATE DIMENSION.				ECR: D-12-025	



IS

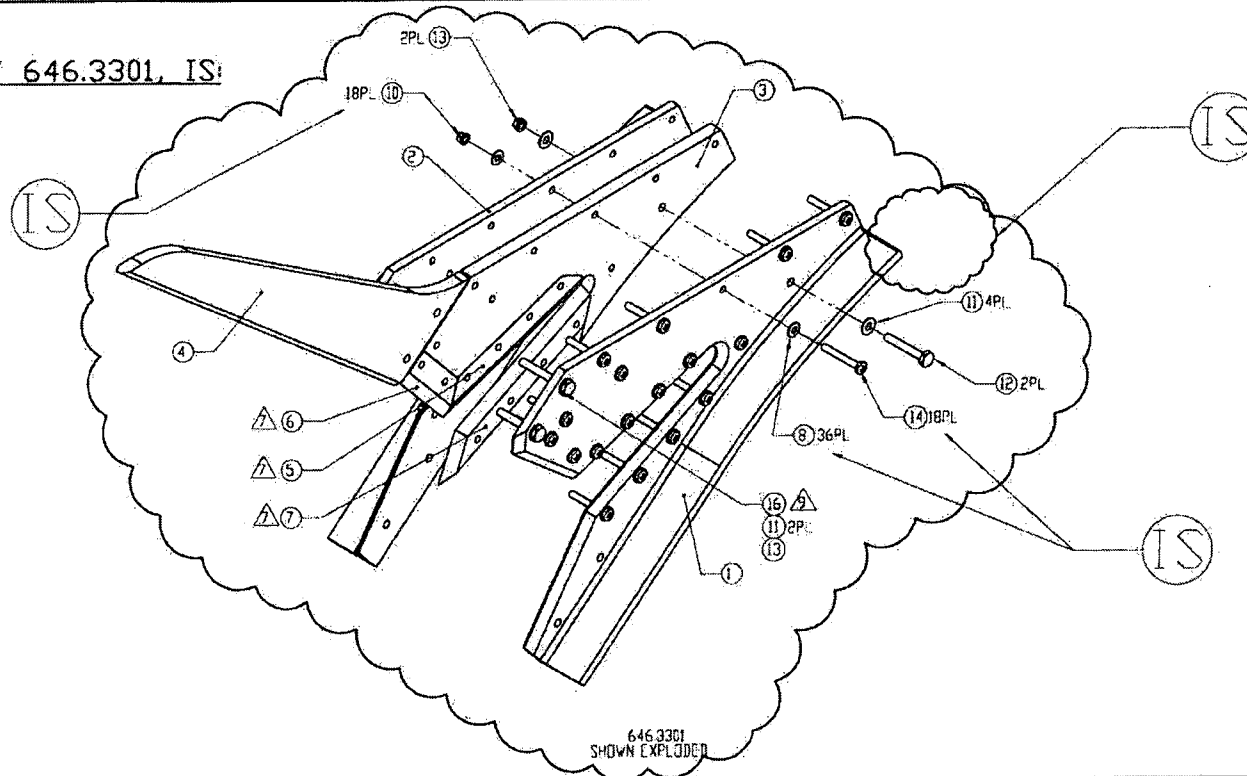
SHOP COPY  
 RETURN TO  
 ENGINEERING  
 UNCONTROLLED COPY  
 SUBJECT TO AMENDMENT  
 WITHOUT NOTICE  
 WORK ORDER  
 NO. 121871MLJ  
 140704

**SHEET 4, ZONE B8 IS:**

DOCUMENTS EFFECTED:	<input type="checkbox"/> RFMS <input type="checkbox"/> MDL <input type="checkbox"/> INSTALL INSTRU <input type="checkbox"/> ICA <input type="checkbox"/> BOM	CHANGE CATEGORY	DER REVIEW REQUIRED
		<input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

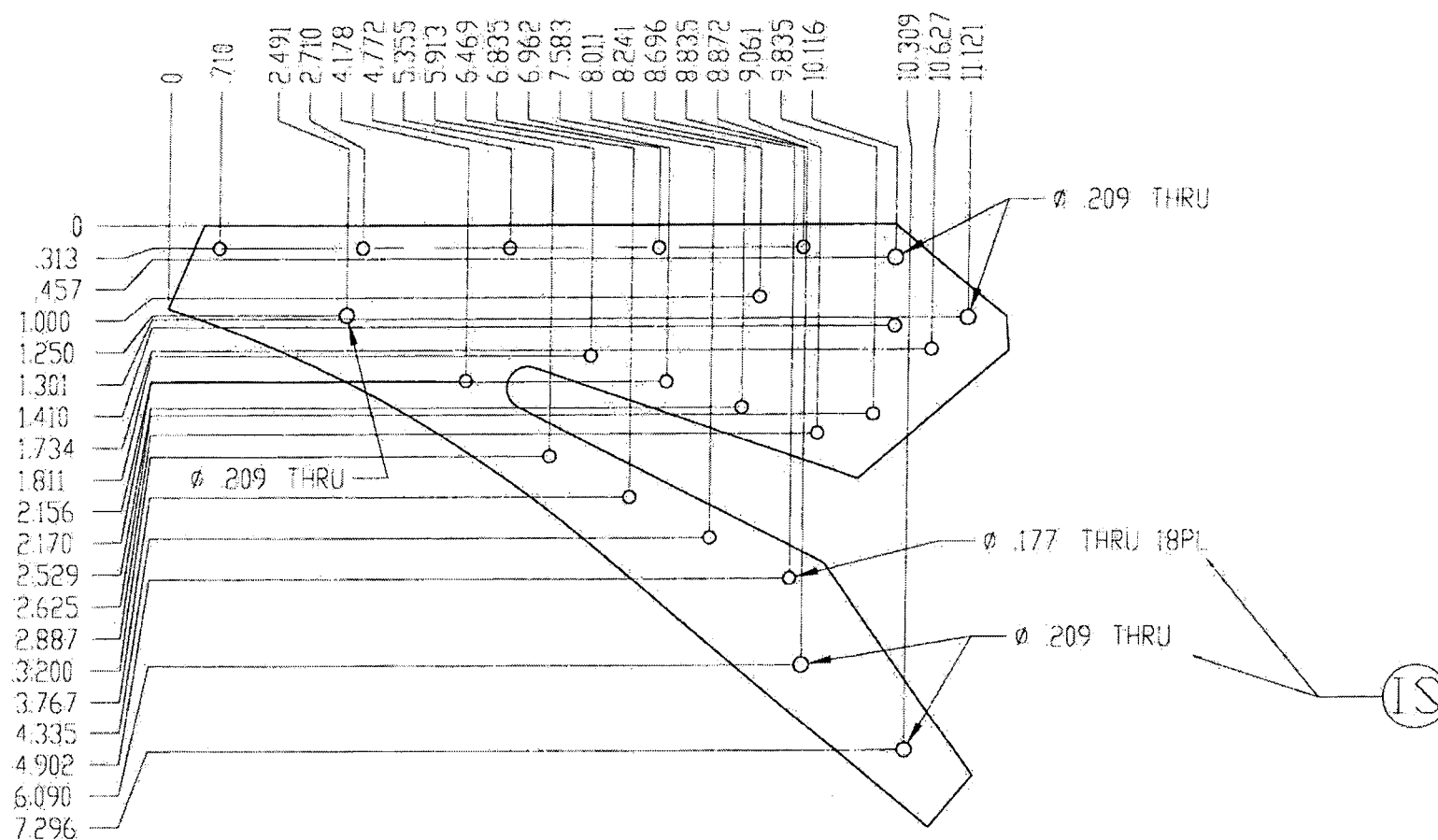
APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 02196		SHEET 1 OF 2	
	DWG NO. 646.3300	REV: N/C	PREPARED BY S. HUFF	DATE: 01/05/09
	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.			
DWG TITLE: UPPER CUTTER ASSY				
APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER	
REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS				
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE				

SHEET 1, VIEW 646.3301, IS:



14	R	601.2765	18	SCREW	MS27039-0819
10	R	601.1541	18	LOCKNUT	MS21042L08
9	D	601.2766	3	RIVET	MS20470AD5-18
8	R	601.2764	36	WASHER	NAS1149FN832P
			3301		
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED:				<input type="checkbox"/> MDL <input checked="" type="checkbox"/> INSTALL INSTRU <input checked="" type="checkbox"/> ICA <input type="checkbox"/> FMS <input checked="" type="checkbox"/> BOM	CHANGE CATEGORY <input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR
				DER REVIEW REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

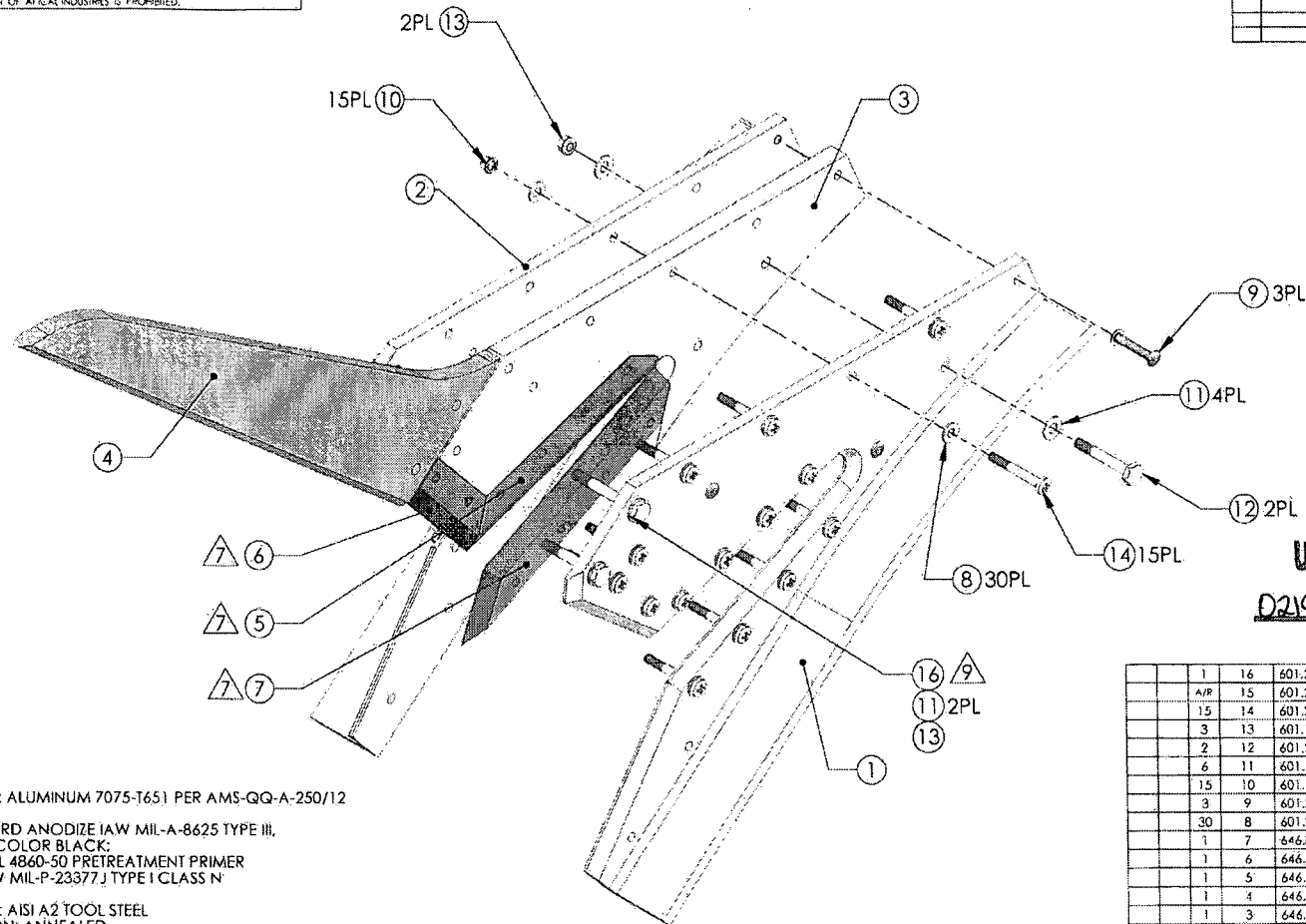
## SHEET 3, SECTION VIEW A-A, IS:



F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

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REV.	DESCRIPTION	DATE	APPROVED



UNINCORPORATED ECN(s)

02196, 03724

# NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
- 3 MATERIAL: AISI A2 TOOL STEEL  
CONDITION: ANNEALED  
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 15 AS REQUIRED TO ALL FAYING SURFACES OF F/N 5, 6 & 7 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 INSTALL FASTENER FINGER-TIGHT

646.3301  
SHOWN EXPLODED

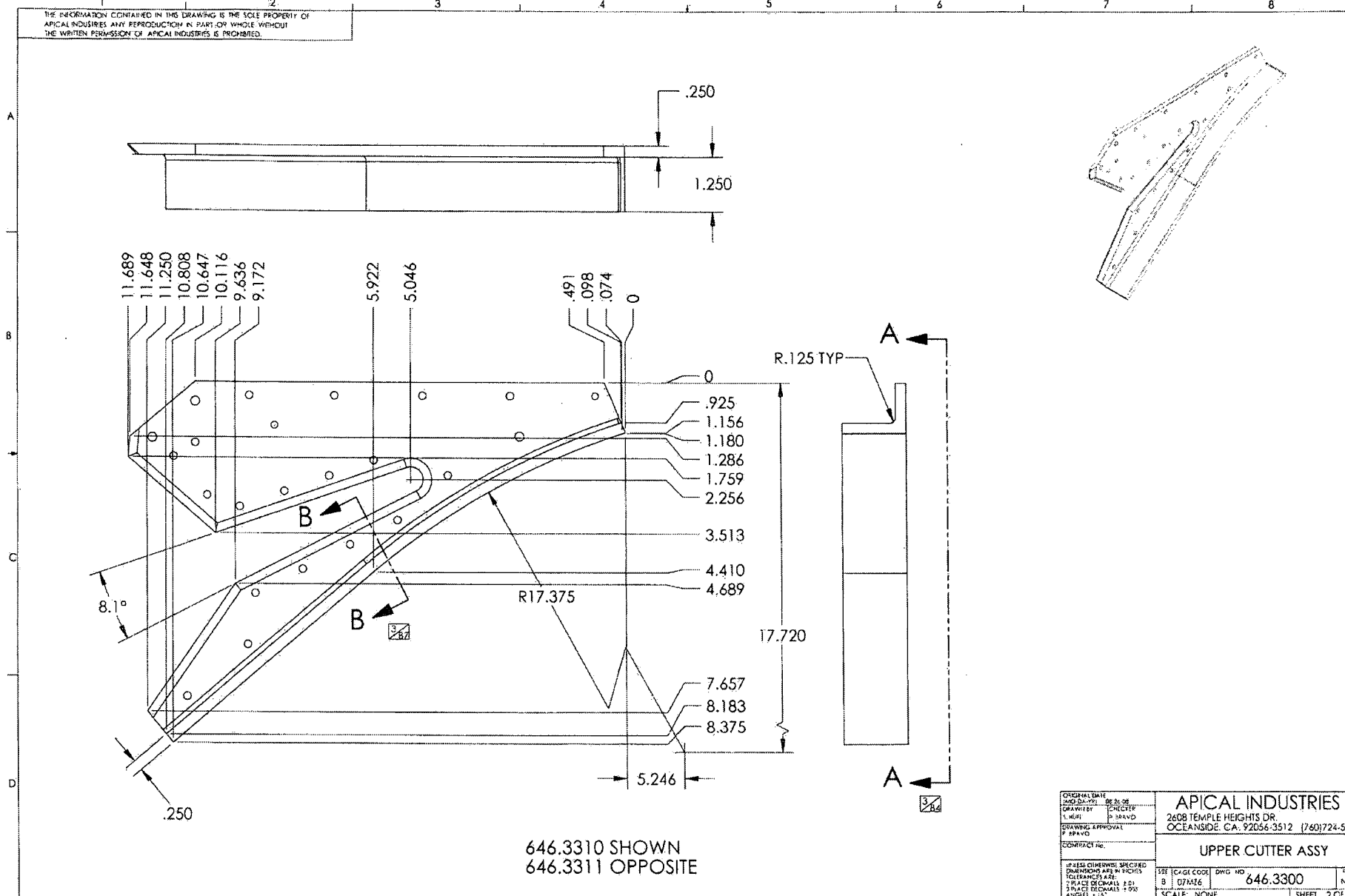
QTY	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.
1	16	601.2834	BOLT	AND 16A	
A/R	15	601.2045	RTV, LOCTITE 598		
15	14	601.2765	SCREW	MSS703P 08 18	
3	13	601.1674	LOCKNUT	MSS2154213	
2	12	601.2763	BOLT	AFB-12A	
6	11	601.1607	WASHER	NA-S1 144700920	
15	10	601.1541	LOCKNUT	MSS1042100	
3	9	601.2766	RIVET	MSS20476425-18	
30	8	601.2764	WASHER	NA-S1 144700920	
1	7	646.3316	BLADE		
1	6	646.3315	BLADE		
1	5	646.3314	BLADE		
1	4	646.3313	UPPER GUIDE		
1	3	646.3312	CENTER PLATE		
1	2	646.3311	RH HALF		
1	1	646.3310	LH HALF		
1		646.3301	UPPER CUTTER ASSY		
PARTS LIST					
NEXT ASSY (S)			ORIGINAL DATE		
646.4000			DRAWN BY: J. B. V. C.		
			CHECKED BY: J. B. V. C.		
			APPROVAL BY: J. B. V. C.		
			CONTRACT NO.:		
			UNLESS OTHERWISE SPECIFIED		
			DIMENSIONS ARE IN INCHES		
			TOLERANCES ARE:		
			2 PLACE DECIMALS ± .01		
			3 PLACE DECIMALS ± .005		
			ANGLES ± .5°		
			SCALE: NONE		
			SHEET 1 OF 8		

**APICAL INDUSTRIES**  
2608 TEMPLE HEIGHTS DR.  
OCEANSIDE, CA. 92056-3512 (760) 774-5300

**UPPER CUTTER ASSY**

DATE: 07/16/16 DWG. NO: 646.3300 R/V: N/C

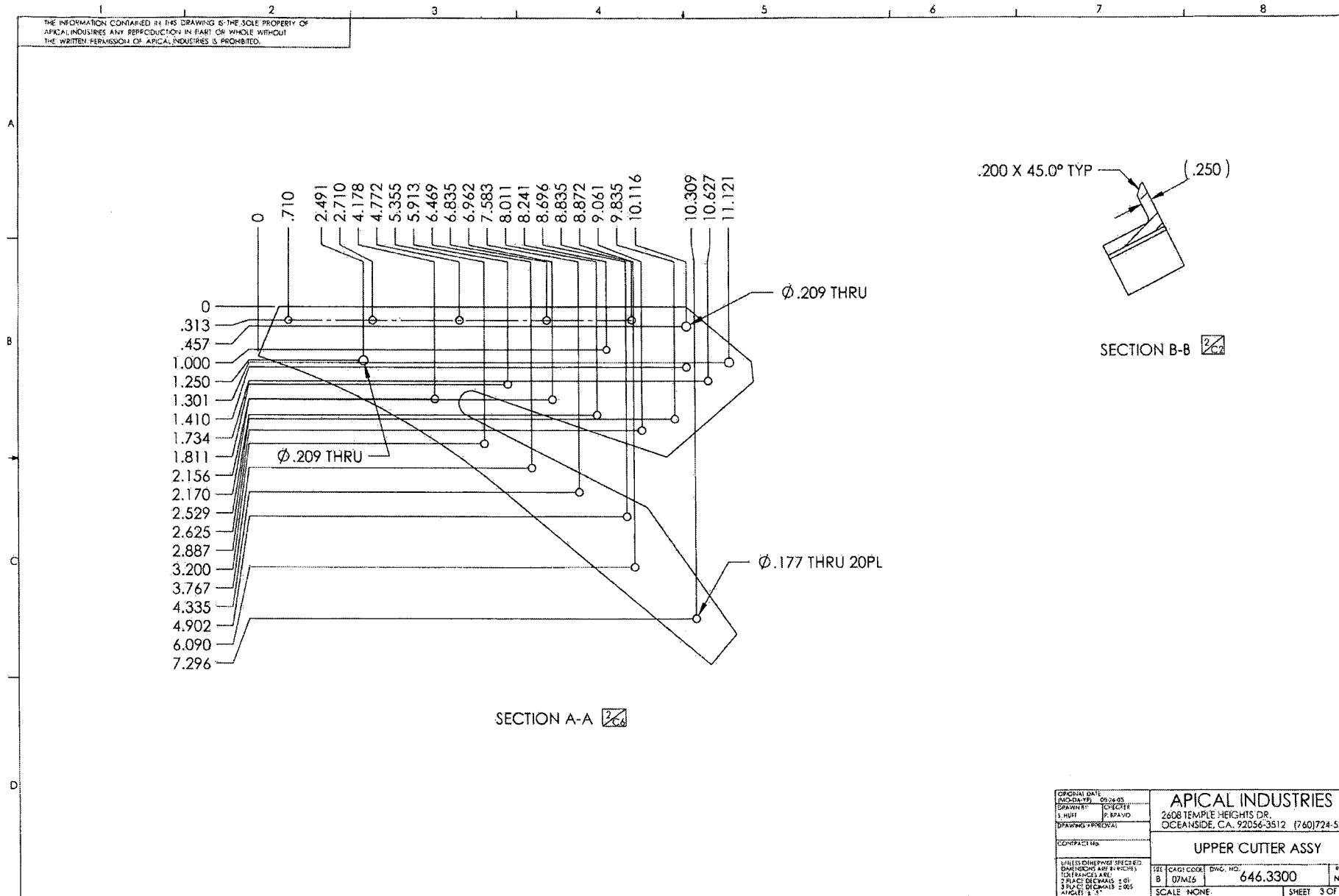
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ORIGINAL DATE REV. 01-77		APICAL INDUSTRIES	
DESIGNED BY 1. HET		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAND		UPPER CUTTER ASSY	
CONTRACT NO.		646.3300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ± .01 ANGLES ± .5°		REV. 07/816	N/C
SCALE: NONE		SHEET 2 OF 8	



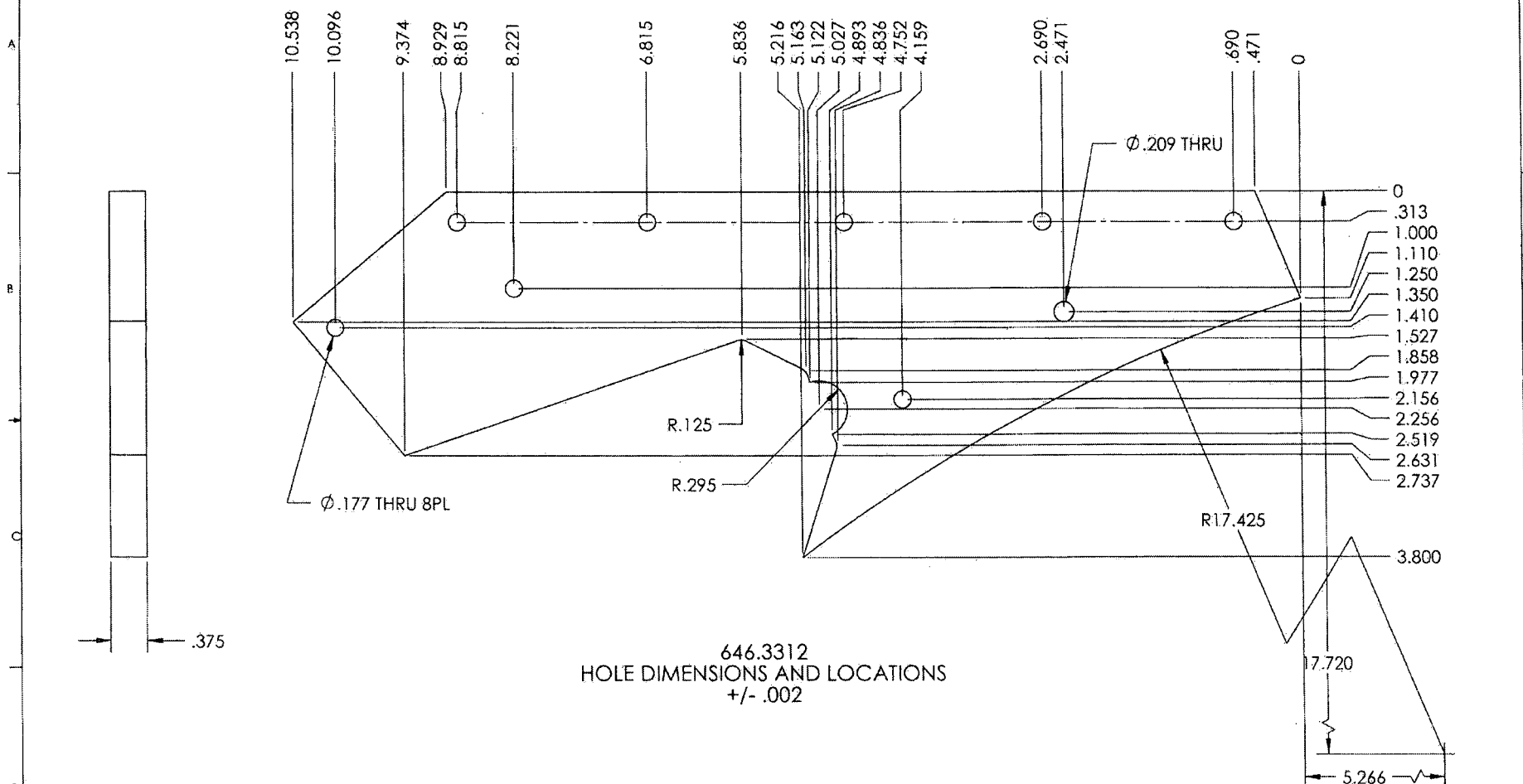
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ORIGINAL DATE REVISIONS S. HUFF P. B. PAVO DRAWING PREPARED BY CHECKED BY		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ± .015 ANGLES ± .5°		ISS. CODE CODE B 07M16	REV N/C
SCALE: NONE		SHEET 3 OF 8	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

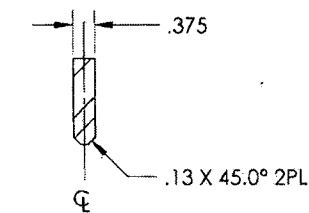
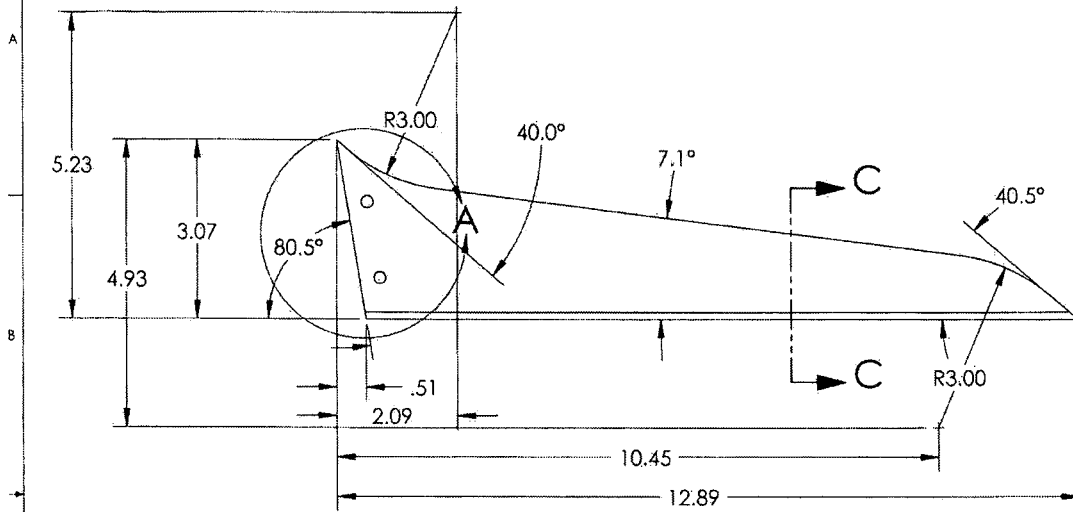


<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3312 (760) 724-5300	
<b>UPPER CUTTER ASSY</b>	
SHEET 4 OF 8	REV. N/C

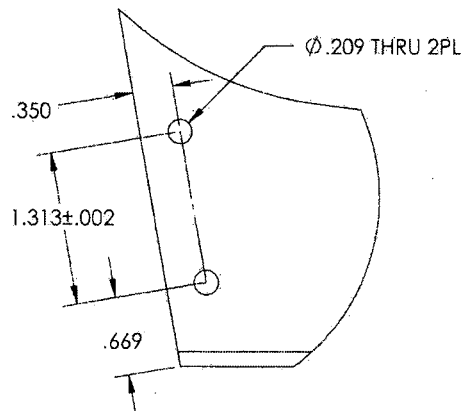
ORIGINAL DATE: 08/21/00 DRAWN BY: J. HUFF CHECKED BY: P. BRAVO DRAWING APPROVAL: P. BRAVO CONTRACT NO.:	PARTS COMPANIES SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 DECIMAL DECIMALS ± .01 2 DECIMAL DECIMALS ± .005 ANGLES ± .5°
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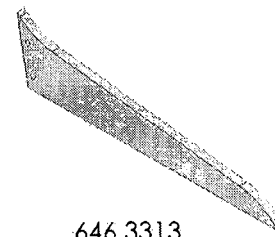
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



SECTION C-C



DETAIL A

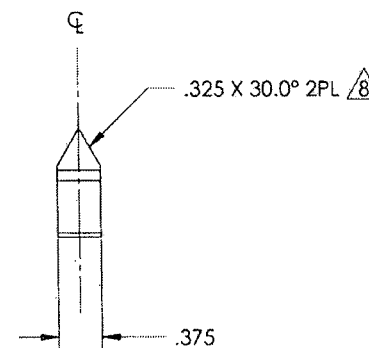
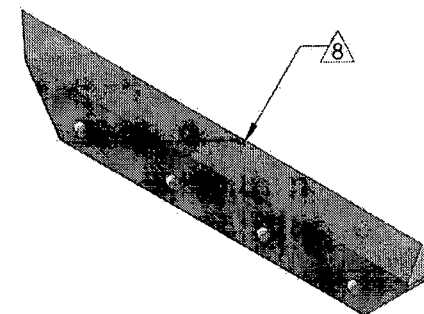
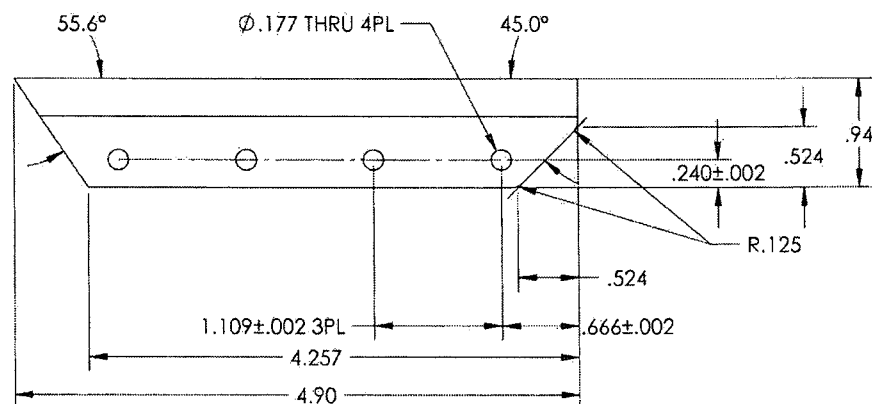


646.3313

ORIGINAL DATE JUL 04 1993		DESIGNED BY P. SPANO	
DRAWN BY S. HOFF		CHECKED BY P. SPANO	
DRAWING APPROVED BY P. SPANO		DATE 07/04/93	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES		<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300 <b>UPPER CUTTER ASSY</b> 646.3300 SCALE: NONE	
SHEET 5 OF 8		Dwg. No. 646.3300 Rev. B 07/03/96 INC	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

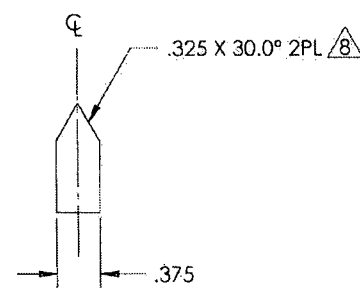
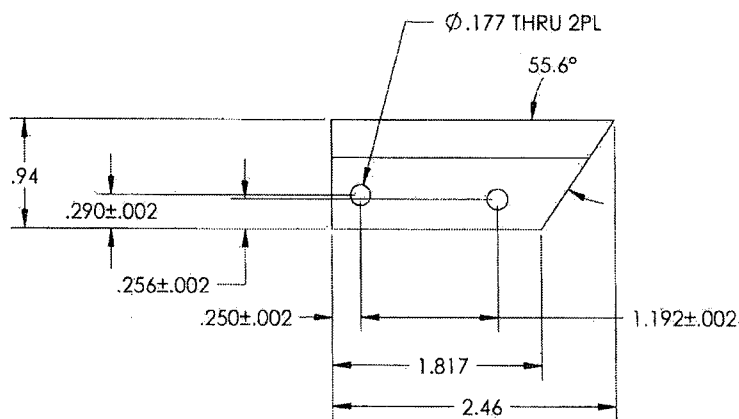
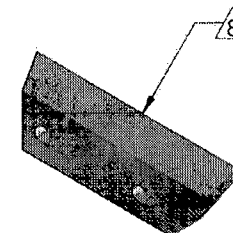


646.3314

ORIGINAL DATE: 08-28-00 DRAWN BY: S. HUNT CHECKED BY: P. BRAVO DRAWING APPROVAL: P. BRAVO DATE: 08-28-00 CONTROLLED BY:		<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNITED STATES SPECIFIC DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		<b>UPPER CUTTER ASSY</b>	
REV	CHANGE CODE	DWG. NO.	REV
B	07/04	646.3300	N/C
SCALE: NONE		SHEET 6 OF 8	

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REV	DESCRIPTION	DATE	APPROVED

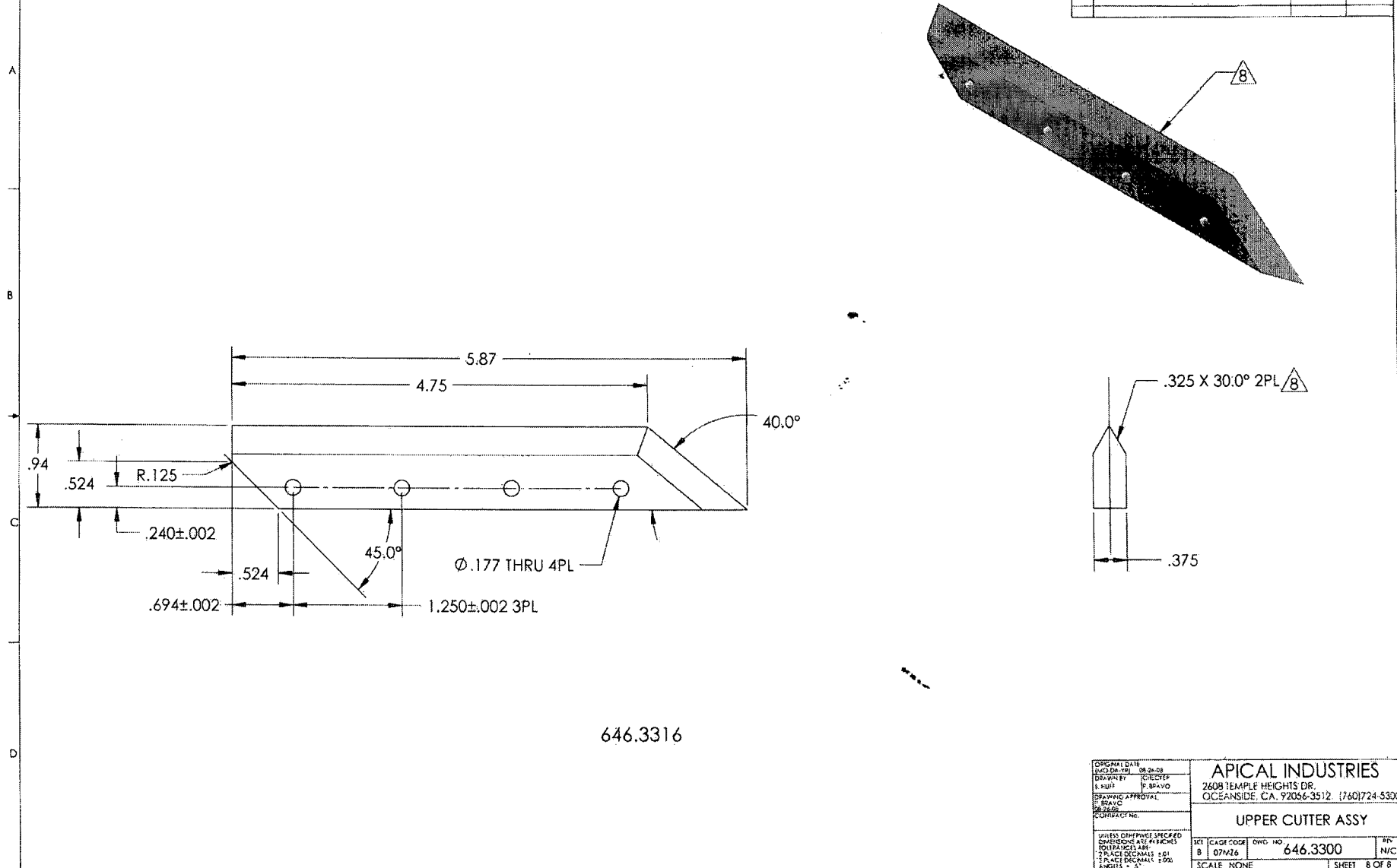


646.3315

ORIGINAL DATE: 06-26-06 DRAWN BY: P. BRAVO CHECKED BY: P. BRAVO DRAWING APPROVAL: P. BRAVO CONTRACT NO:		<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FINISH DIMENSIONS ±.01 SPINITE DIMENSIONS ±.005 ANGLES ±.5°		P/N: 646.3300 SCALE: NONE	REC: N/C SHEET: 7 OF 8

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED







Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO25229**

Purchase Order Date 7/30/2014

PO Print Date 7/31/2014

Page Number 4 of 8

**Order From :**

A.T.G. INDUSTRIES INC.  
731 INDUSTRIELLE ROAD  
ROCKLAND, ON K4K 1T2  
CANADA

VC-ATG001

**Ship To :** DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone** 613-446-4544

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms**

Net 30

**Currency**

CAD

**FOB**

FCA - (Free Carrier)

**Ship To Contact**

**Ship To Phone**

**Ship Via:**

VENDOR'S TRUCK

**Ship Acct:**

**Line Total:** \$0.00

9 122766 *14-8-18* ✓ D5140-2 UPPER CUTTER 8/15/2014 4.00 \$0.00 \$0.00

Yes

8/15/2014

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

**Line Total:** \$0.00

10 121853 646.3310 LH HALF 8/15/2014 10.00 *rec'd x* *SP14-8-18* \$0.00 \$0.00

Yes

8/15/2014

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

**Line Total:** \$0.00

11 121871 *SP14-8-18* ✓ 646.3312 CENTER PLATE 8/15/2014 10.00 \$0.00 \$0.00

Yes

8/15/2014

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

**Line Total:** \$0.00

**Note:**

7/31/2014





A.T.G. Industries Inc.  
731, rue Industrielle Rd.  
PLATING DEPARTMENT  
Rockland, On K4K 1T2  
Canada  
Ph: (613) 446-4544  
Fax: (613) 446-4556

## Pack List

Number: 63206

Date: 15-Aug-14

To

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

Ship To

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity	Description	Rev:	Line:
4 ea	Part: 646.3310 LH HALF HARD ANODIZE AS PER MIL-A-8625 TY II, CLASS 2  PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140493 PO: PO25229		
10 ea	Part: 646.3312 CENTER PLATE HARD ANODIZE AS PER MIL-A-8625 TY II, CLASS 2  PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140494 PO: PO25229		8/14-8-18
20 ea	Part: 647.3911 UPPER DEFLECTOR HARD ANODIZE AS PER MIL-A-8625 TY II, CLASS 2  PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140495 PO: PO25229		
32 ea	Part: 647.4211 RAIL HARD ANODIZE AS PER MIL-A-8625 TY II, CLASS 2  PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20140498 PO: PO25229		
44 ea	Part: 647.9018 DOUBLER HARD ANODIZE AS PER MIL-A-8625 TY II, CLASS 2  PRIME AS PER MIL-P-23377J TYPE I CLASS N		